

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-19 are pending. Claims 1, 8-11, 18, and 19 are amended. Support for the amendments to Claims 1, 8-11, 18, and 19 can be found at page 11, lines 14-20 in the specification, for example. No new matter is added.

In the outstanding Office Action, Claims 9 and 10 were objected to for minor informalities. Claims 1-3, 5, and 8-10 were rejected under 35 U.S.C. §103(a) as obvious over Eom (U.S. Patent Pub. 2003/0053093, herein "Eom") in view of Dwyer (U.S. Patent No. 5,030,986, herein "Dwyer") and Hoshino et al. (U.S. Patent No. 4,912,491, herein "Hoshino"). Claim 4 was rejected under 35 U.S.C. §103(a) as obvious over Eom in view of Dwyer and Hoshino and further in view of Sikes et al. (U.S. Patent No. 6,499,402, herein "Sikes"). Claims 11, 13, 15, and 18-19 were rejected under 35 U.S.C. §103(a) as obvious over Eom in view of Hennings (U.S. Patent No. 3,712,740, herein "Hennings") and Hoshino. Claim 12 was rejected under 35 U.S.C. §103(a) as obvious over Eom in view of Hennings and Hoshino and further in view of Dwyer. Claim 14 was rejected under 35 U.S.C. §103(a) as obvious over Eom in view of Hennings and Hoshino and further in view of Sikes. Claims 6, 7, 16, and 17 were indicated as reciting allowable subject matter.

Applicant notes with appreciation the indication that Claims 6, 7, 16, and 17 recite allowable subject matter.

At the outset, Applicant notes with appreciation the courtesy of a personal interview extended by Primary Examiner Hai C. Pham to Applicant's representatives. The personal interview was conducted on April 7, 2006. During the personal interview, the presently submitted claim amendments were discussed as clarifying the structure recited in the claims.

Regarding the objection to Claims 9 and 10 for informalities, Claims 9 and 10 are amended to address the informalities noted in the outstanding Office Action. Accordingly, Applicant respectfully submits that the objection to Claims 9 and 10 is overcome.

Regarding the rejection of Claims 1-3, 5, and 8-10 as obvious over Eom, Dwyer and Hoshino, that rejection is respectfully traversed by the present response.

Amended Claim 1 recites, in part:

a synthesizing unit configured to refract input light from the light source and to pass the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected from the position detection pattern

Accordingly, the synthesizing unit is configured to refract input light and to pass the light of the light source so as to illuminate the position detection pattern.

Regarding Eom, the outstanding Office Action acknowledges that Eom fails to teach a synthesizing unit that passes light of a light source so as to illuminate the position detection pattern.¹

The outstanding Office Action relies on Hoshino for the feature of a two-dimensional image sensor. Nowhere in Hoshino is a synthesizing unit that is configured to refract input light and to pass the light so as to illuminate a position detection pattern disclosed.

The outstanding Office Action relies on the beam splitter (905) of Dwyer for the feature of a synthesizing unit that passes light of a light source so as to illuminate the position of the recording medium (940) and that collects and reflects light reflected from the recording medium.² However, as discussed in the personal interview, and shown in Fig. 10 of Dwyer, the beam splitter (905) merely passes light from the light source (901) focused by the lens (902) directly toward the lens (930) without any form of refraction. In other words, the light passing through the beam splitter (905) passes straight through the beam splitter (905). The

¹ Outstanding Office Action at 3.

² Outstanding Office Action at 3.

light then reflects off of the recording medium (940), back through the lens (930), and onto the mirrored surface of the beam splitter (905). The light then travels downward onto the metal shield (904), through the aperture (906), and onto the light receiving sensor (950), all without any refraction by the beam splitter (905). Accordingly, as discussed in the personal interview, the beam splitter (905) does not qualify as a synthesizing unit configured to refract input light and to pass the light of the light source so as to illuminate the position detection pattern as recited in amended Claim 1. Thus, no reasonable combination of Eom, Dwyer, and Hoshino would include all of the features recited in amended independent Claim 1, and Applicant respectfully submits that the rejection of independent Claim 1 is overcome.

Claims 2, 3, and 5 depend from amended independent Claim 1. Accordingly, Applicant respectfully submits that Claims 2, 3, and 5 patentably distinguish over the cited references for at least the same reasons as amended independent Claim 1.

Independent Claim 8 is amended to include the same features discussed above regarding amended independent Claim 1. Accordingly, Applicant respectfully submits that amended independent Claim 8 patentably distinguishes over the cited references for at least the same reasons as amended independent Claim 1.

Claims 9 and 10 depend from amended independent Claim 8. Accordingly, Applicant respectfully submits that Claims 9 and 10 patentably distinguish over the cited references for at least the same reasons as amended independent Claim 8.

Regarding the rejection of Claim 4 as obvious, Eom, Dwyer, Hoshino, and Sikes, that rejection is respectfully traversed by the present response.

Claim 4 depends from amended independent Claim 1 and patentably distinguishes over Eom, Dwyer, and Hoshino for at least the same reasons as amended independent Claim 1.

Sikes fails to remedy the deficiencies discussed above regarding Dwyer, Hoshino and Eom. The outstanding Office Action relies on Sikes for the feature of a plurality of dots used as a registration pattern.³ However, as shown in Fig. 2, Sikes employs no synthesizer that refracts light as recited in amended independent Claim 1. Accordingly, Applicant respectfully submits that dependent Claim 4 patentably distinguishes over the cited references for at least the reasons discussed above.

Regarding the rejection of Claims 11, 13, 15, and 18-19, as obvious over Eom in view of Hennings and Hoshino, that rejection is respectfully traversed by the present response.

Independent Claim 11 is amended to recite, in part:

a synthesizing unit that passes the light of the light source and refracts the light so as to illuminate the position detection pattern, collects a light reflected from the position detection pattern, and reflects the collected light off a first reflecting surface

Thus, like amended Claim 1, amended Claim 11 recites a synthesizing unit that passes the light of the light source and refracts the light so as to illuminate the detection pattern.

As discussed above, Eom and Hoshino both fail to disclose this feature. The outstanding Office Action relies on Hennings for the feature of the synthesizing unit.

The outstanding Office Action points to the first half mirror (15) of Hennings for the feature of a synthesizing unit. However, as discussed in the personal interview, the first half mirror (15) does not refract input light so as to illuminate the position detection pattern. Rather, as shown in Fig. 6, the half mirror (15) passes light from the light source (13) directly onto the mask (3) with no deviation or refraction whatsoever. Hennings is devoid of any synthesizing unit that refracts input light and passes the light so as to illuminate the position detection pattern as recited in amended Claim 11. Accordingly, Applicant respectfully

³ Outstanding Office Action at 4.

submits that amended independent Claim 11 patentably distinguishes over any reasonable combination of Eom, Hennings, and Hoshino.

Claims 13 and 15 depend from amended independent Claim 11, and Applicant respectfully submits that Claims 13 and 15 patentably distinguish over the cited references for at least the same reasons as amended independent Claim 11.

Claims 18 and 19 are amended to recite substantially similar features to those discussed above regarding amended independent Claim 11. Accordingly, Applicant respectfully submits that amended independent Claims 18 and 19 patentably distinguish over the cited references for at least the same reasons as amended independent Claim 11.


Regarding the rejection of Claim 12 as obvious over Eom, Hennings, Hoshino and Dwyer, Applicant respectfully submits that as discussed above, none of the cited references discloses a synthesizer that refracts light as recited in amended independent Claim 11, from which Claim 12 depends. Accordingly, Applicant respectfully submits that dependent Claim 12 patentably distinguishes over the cited references for at least the same reasons as amended independent Claim 11.

Similarly, dependent Claim 14 depends from amended independent Claim 11 and patentably distinguishes over Eom, Hennings, Hoshino, and Sikes for at least the same reasons as amended independent Claim 11.

Consequently, in light of the above discussion and in view of the present amendments, the present application is believed to be in condition for allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)
LS/rac

Surinder Sachar
Registration No. 34,423

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